

CLAIM AMENDMENTS

IN THE CLAIMS

This listing of the claims will replace all prior versions, and listing, of claims in the application or previous response to office action:

1-9. (Previously Cancelled)

10. (Currently Amended) A method for controlling a fuel pressure in a fuel supply device of an internal combustion engine having a regulator valve, the method comprising the steps of:

determining a desired fuel pressure value;

determining an actual fuel pressure value by a fuel pressure sensor;

calculating an actual fuel pressure gradient from at least two consecutive actual fuel pressure values from said fuel pressure sensor;

comparing the calculated actual fuel pressure gradient to a specified threshold gradient value; and

if the calculated actual fuel pressure gradient is above the specified threshold gradient value then determining an actuating signal as a function of the desired fuel pressure value and the calculated actual fuel pressure gradient; and

controlling said regulator valve with said actuating signal;

wherein the desired fuel pressure value represents a fuel pressure, in contrast to the calculated actual fuel pressure gradient, which represents a change in fuel pressure over time.

11. (Previously Cancelled)

12. (Currently Amended) A method for controlling a fuel pressure or flow rate in a fuel supply device of an internal combustion engine, wherein the supply device has a fuel pump that pumps a fuel into a fuel accumulator that supplies injection valves with the fuel, wherein the fuel accumulator comprises a sensor and is connected to a regulator valve that adjusts the fuel pressure as a function of an actuating signal comprising the steps of:

determining a desired fuel pressure or flow rate value;

determining an actual fuel pressure or flow rate value by means of said sensor;

calculating an actual gradient from at least two consecutive actual fuel pressure or flow rate values;

comparing the calculated actual gradient to a specified threshold gradient value; and

if the calculated actual gradient is above the specified threshold gradient value then determining an actuating signal as a function of the desired fuel pressure value and the calculated actual gradient; and

controlling said regulator valve with said actuating signal;

whercin the desired fuel pressure or flow rate value represents a fuel pressure or flow rate, in contrast to the calculated actual gradient, which represents a change in fuel pressure or flow rate over time.

13. (Previously Presented) The method according to Claim 12, wherein the regulator valve is an electromagnetic regulator and an energization of the electromagnetic regulator is influenced by the actuating signal.

14. (Previously Presented) The method according to Claim 13, wherein the step of controlling said regulator valve with said actuating signal includes:

if the flow rate increases, decreasing an energization of the electromagnetic regulator;

and

if the flow rate falls, increasing the energization of the electromagnetic regulator.

15. (Previously Presented) The method according to Claim 13, wherein the step of controlling said regulator valve with said actuating signal includes:

if the fuel pressure increases, decreasing the energization of the electromagnetic regulator; and

if the fuel pressure falls, increasing the energization of the electromagnetic regulator.

16. (Previously Presented) The method according to Claim 14, wherein the step of controlling said regulator valve with said actuating signal includes:

if the fuel pressure increases, decreasing the energization of the electromagnetic regulator; and

if the fuel pressure falls, increasing the energization of the electromagnetic regulator.

17. (Previously Presented) The method according to Claim 12, further comprising if the calculated actual gradient is below said specified threshold gradient value then determining the actuating signal as a function of the desired fuel pressure value.

18. (Previously Cancelled)

19. (Previously Presented) The method according to Claim 10, wherein the regulator valve is an electromagnetic regulator and an energization of the electromagnetic regulator is influenced by the actuating signal.

20. (Previously Presented) The method according to Claim 10, wherein the step of controlling said regulator valve with said actuating signal includes:

if the flow rate increases, decreasing an energization of the electromagnetic regulator; and

if the flow rate falls, increasing the energization of the electromagnetic regulator.

21. (Previously Presented) The method according to Claim 19, wherein the step of controlling said regulator valve with said actuating signal includes:

if the fuel pressure increases, decreasing the energization of the electromagnetic regulator; and

if the fuel pressure falls, increasing the energization of the electromagnetic regulator.

22. (Previously Presented) The method according to Claim 20, wherein the step of controlling said regulator valve with said actuating signal includes:

if the fuel pressure increases, decreasing the energization of the electromagnetic regulator; and

if the fuel pressure falls, increasing the energization of the electromagnetic regulator.

23. (Previously Presented) The method according to Claim 10, further comprising if the calculated actual gradient is below said specified threshold gradient value then determining the actuating signal as a function of the desired fuel pressure value.

24. (Previously Cancelled)

25. (Currently Amended) A method for controlling a fuel flow rate in a fuel supply device of an internal combustion engine having a regulator valve, the method comprising the steps of:

determining a desired fuel flow rate;

determining an actual fuel flow rate;

calculating an actual fuel flow rate gradient from at least two consecutive actual fuel flow rates;

comparing the calculated actual flow rate gradient to a specified threshold gradient value; and

if the calculated actual flow rate gradient is above the specified threshold gradient value then determining an actuating signal as a function of the desired fuel flow rate and the calculated actual flow rate gradient; and

controlling said regulator valve with said actuating signal;
wherein the desired fuel flow rate represents a flow rate, in contrast to the calculated actual fuel flow rate, which represents a change in flow rate over time.

26. (Previously Presented) The method according to claim 25, wherein the actual fuel flow rate is determined by means of a flow sensor.

27. (Previously Presented). The method according to claim 10, further comprising the step of supplying fuel injectors with fuel having the fuel pressure regulated by said regulator valve.

28. (Previously Presented) The method according to claim 12, further comprising the step of supplying fuel injectors with the fuel having the fuel pressure or flow rate regulated by said regulator valve.

29. (Previously Presented) The method according to claim 25, further comprising the step of supplying fuel injectors with fuel having the fuel flow rate regulated by said regulator valve.